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Claim Amendments
Including a complete listing of all claims

1. (Canceled)
2. (Canceled)
3. (Canceled)
4. (Canceled)
5. (Canceled)
6. (Canceled)
7. (Canceled)
8. (Canceled)
9. (Canceled)
10. (Canceled)
11. (Canceled)

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12. (Canceled)

13. (Canceled)

14. (Canceled)

15. (Currently Amended) A system for detecting a goal comprising:

an inflatable ball having a bladder with opposing walls and an outer covering;

a passive sensor ~~located~~ pressed inside and between the opposing walls of the bladder of said inflatable ball, said passive sensor weighing less than ten grams;

a transceiver positioned adjacent a goal so as to detect said passive sensor when said inflatable ball has completely crossed a goal line;

an electronic device worn by a referee capable of receiving a signal from said transceiver, whereby a goal is confirmed by the referee; and

an electronic cabin housing an official and additionally receiving the signal from said transceiver, whereby a decision of the referee may be checked.

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16. (Previously Presented) A system for detecting a goal as in claim 15 wherein:

said transceiver is positioned at least 30 cm inside the goal line, whereby interference from a goalkeeper or other players is prevented.

17. (Previously Presented) A goal detection system for accurately detecting a goal in a football or soccer game comprising:

an inflatable ball having an inner bladder and outer covering;

a passive sensor formed completely inside the thickness of the inner bladder during the phase of pressing the inner bladder of said inflatable ball, said passive sensor weighing less than ten grams;

a transceiver positioned at least 30 centimeters behind a goal line so as to detect said passive sensor when said inflatable ball has completely crossed the goal line, whereby detection of the passive sensor is improved and interference from a goalkeeper or players is reduced; and

a receiver, worn by a game official and capable of providing a vibrating signal to the game official when said passive sensor is detected by said transceiver,

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whereby the occurrence of a goal is capable of being confirmed.

18. (Previously Presented) A method of detecting a goal in a football or soccer game comprising the steps of:

molding a passive sensor weighing less than ten grams completely inside the thickness of an internal bladder during pressing of the internal bladder for an inflatable ball;

positioning a transceiver at least 30 centimeters behind a goal line so as to detect the passive sensor when the inflatable ball has completely crossed a goal line, whereby detection of the passive sensor is improved and interference from a goalkeeper or players is reduced; and

providing a signal to a game official when the passive sensor is detected by the transceiver,

whereby the occurrence of a goal is capable of being confirmed.

19. (Previously Presented) A method of manufacturing an inflatable ball used in detecting a goal in a football or soccer game comprising the steps of:

molding a passive sensor weighing less than ten grams completely inside the thickness of an internal bladder during pressing of the internal bladder; and

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covering the internal bladder with an external covering,
whereby the passive sensor is securely held and protected
from damage within the internal bladder.

20. (New) A method of detecting a goal in a football or
soccer game as in claim 18 further comprising the steps of:

detecting the moment when the inflatable ball has been
kicked; and

transmitting to the game official a signal indicating that
the inflatable ball has been kicked,

whereby the occurrence of a goal is capable of being
confirmed when the inflatable ball has completely crossed the
goal line in combination with the step of detecting the moment
when the inflatable ball has been kicked.

21. (New) An electronically detectable ball usable for a
ball game, comprising:

a bladder;

an external covering enclosing said bladder;

a detectable electronic sensor adapted to be detected by
detecting means; and

wherein said detectable electronic sensor is embedded in the
wall of said bladder.

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22. (New) An electronically detectable ball usable for a ball game as in claim 21 further comprising:

pressure sensor means, placed within the ball, for detecting the moment when a player kicks the ball,

whereby the occurrence of a goal is capable of being confirmed when the ball has been detected to have completely crossed a goal line in combination with a signal from the pressure sensor means for detecting the moment when a player kicks the ball.

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REPLY

The Examiner rejected claims 15-19 under 35 USC §103(a) as being unpatentable over King, Jr., (US 2003/0054905 A1) in view of Gray (US 4,718,670).

The Examiner acknowledges that King, Jr., fails to disclose a passive RF device as a signal generator inside of the ball, and the Examiner indicates that Gray discloses the use of a passive RF sensing device inside a ball to detect the ball's passing over a threshold. (*Office Action, page 3, lines 14-16*)

The Examiner's rationale indicated is that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to substitute the method of a battery operated transmitter for the method of a passive, non-battery required transceiver to achieve the result of tracking the movements of a ball in a sports arena. (*Office Action, page 3, lines 18-21*).

However, even if King, Jr., and Gray were combined as advocated by the Examiner, the present invention would not be formed because in the claimed invention the passive sensor is not simply just inside a ball, but it is pressed inside the thickness of the wall of the bladder of the inflatable ball. It is this positioning or pressing of the passive sensor within the inside of the wall of the bladder, or conformed completely inside the

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thickness of the inner bladder, that is not disclosed in any of the references cited by the Examiner and that would not be formed even if King Jr. and Gray were combined as advocated by the Examiner.

Claim 15 has been amended to more specifically recite that the passive sensor is literally located or pressed inside the bladder. Amended claim 15 specifically recites, "a passive sensor pressed inside and between the opposing walls of the bladder of said inflatable ball".

Claim 17 specifically recites, "a passive sensor formed completely inside the thickness of the inner bladder during the phase of pressing the inner bladder of said inflatable ball".

Claim 18 specifically recites the step of, "molding a passive sensor weighing less than ten grams completely inside the thickness of an internal bladder during pressing of the internal bladder for an inflatable ball".

Claim 19 specifically recites the step of, "molding a passive sensor weighing less than ten grams completely inside the thickness of an internal bladder during pressing of the internal bladder for an inflatable ball".

The Examiner has indicated that both King, Jr., and Gray disclose the limitation recited in the claims of the present application that the passive sensor is located inside the

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bladder. To support this, the Examiner refers to paragraph [0045] in King, Jr. and column 2, lines 49-57 in Gray.

However, there is no disclosure of placing a passive sensor inside the thickness or between opposing walls of an internal bladder of an inflatable ball as claimed. King, Jr., in paragraph [0045], only discloses that "...the ball transmitter 40 is embedded under the outer skin of the ball 12..." This does not disclose that a sensor is located inside or pressed between the walls of the bladder.

Perhaps a better understanding of the structure disclosed in King, Jr., is found in paragraph [0040] wherein it states, "A ball computer chip 44 and ball fiber wires 46 are placed between ball 12 leather layers and secured with a special glue, to be connected to several and preferably four ball transmitters 42 distributed over the ball 12 outer surface. The ball computer chip 44 is on the outside surface of the inner tube lobe 48 and secured with a special glue." Therefore, the disclosure or teachings of King, Jr., taken as a whole places the ball computer chip 44 as being glued to the outside surface of the inner tube lobe 48. King, Jr. does not disclose that the passive sensor is pressed or molded within the walls of the internal bladder of the inflatable ball.

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Similarly, Gray discloses, at column 2, lines 58-68 and column 3, lines 1-2, only that:

Two hemispherical shells 22 each lined with a foil hemispherical shape 23 may then be connected to form a tennis ball having a hollow metal foil sphere or pair of hemispheres interior of the ball. It has been found in practice to be preferable to urge the metal foil shape 23 against the interior surface of ball rubber shell 22. If the foil is adhered to the rubber shell, flexing during use results in a cracking of the metal foil. However, if a resilient mass 4 is contained in the interior of the ball and the metal foil is interposed between the resilient mass and the rubber shell so as to urge against the interior surface of the rubber shell, then the foil has a much longer service life.

Accordingly, Gray similarly does not disclose that a passive transformer is located, formed, or presses inside the walls of the inner or internal bladder as claimed in the present application.

Gray actually teaches away from the claimed invention, in advocating the use of a resilient mass contained in the interior of the ball to retain the metal foil against the interior surface of the ball's rubber shell. Accordingly, Gray has a completely different solution to the problem of cracking of the metal foil

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or damage to the sensor than that taught in the present application.

In the present application the inventor has discovered that it is better to embed or press the passive sensor into the walls or thickness of the inner or internal bladder so the passive sensor has very little effect on the ball's dynamics as well as to assure that the relatively delicate passive sensor is not dislodged or damaged during the abuse that a ball must take during the rigors of an athletic event.

This greatly facilitates the reliability and life of a ball utilizing the present invention. Accordingly, the references cited by the Examiner do not actually teach or disclose embedding, forming, or pressing a passive sensor into or between the walls of a inner bladder, and therefore even if the references were combined, as advocated by the Examiner, the present invention, as claimed, would not be formed. Additionally, there would be no basis, and the Examiner has indicated no rationale, as to why it would have been obvious to one skilled in the art in view of the teaching of the cited references to modify the references as recited in the claims so as to form a passive sensor completely pressed or embedded inside the thickness or walls of the inner bladder.

The present invention as claimed is particularly advantageous. The presence of a passive sensor pressed or

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embedded in the thickness or between the walls of an internal bladder allows the sensor to avoid bumps, malfunctions or defects. In the case of a soccer ball, the ball is not affected at all by the presence of the passive sensor formed inside the bladder and will behave like an ordinary soccer ball. By providing the passive sensor pressed or embedded in the wall of the bladder, better shielding of the sensor is achieved even when the ball is strongly hit or kicked, which is typical in a soccer match. Therefore, according to the present invention, the special arrangement of the delicate passive sensor is particularly advantageous to avoid any damage to or malfunction of the passive sensor, even if the passive sensor is particularly fragile. Additionally, by pressing or embedding the sensor in the wall of the bladder, the passive sensor is prevented from shifting even as a consequence of strong hits to the ball. None of the references cited by the Examiner can achieve all these benefits as taught and claimed in the present application.

New dependent method claim 20 has been added to include the additional method steps of detecting the moment when the inflatable ball has been kicked, and transmitting to the game official a signal indicating that the inflatable ball has been kicked. The signal indicating that the inflatable ball has been kicked, may be used in combination with the signal provided to the game official when the passive sensor is detected by the

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transceiver located at least thirty centimeters behind a goal line to confirm that a goal has been made.

Support for new dependent claim 20 can be found on page 6, lines 17-24 of the application.

New independent claim 21 has been added to recite an electronically detectable ball, wherein a detectable electronic sensor is embedded in the wall of the bladder. Accordingly, as indicated above, the references cited by the Examiner do not disclose embedding a sensor in the wall of the bladder, but only that a sensor is placed within a ball or on a surface of the ball.

New dependent claim 22 has been added to recite the further limitation of a pressure sensor means placed within the ball for detecting the moment when a player kicks the ball. Accordingly, by detecting the moment when a player kicks the ball in combination with a detectable electronic sensor adapted to be detected by detecting means, the occurrence of a goal is capable of being confirmed by the kicking of the ball occurring slightly before the detection of the ball having completely crossed the goal line. Therefore, the occurrence of a goal may be confirmed with a higher degree of confidence. None of the prior art references cited by the Examiner disclose the combination of a detectable electronic sensor adapted to be detected by detecting

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means in combination with a pressure sensor means for detecting the moment when a player kicks the ball.

Accordingly, it is respectfully requested that the Examiner reconsider the present application enter this Amendment and Reply and indicate allowable subject matter.

Respectfully submitted,

A handwritten signature in black ink, consisting of a large, stylized loop followed by a horizontal line and a short vertical stroke.

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